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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,158	09/08/2003	Soo-Hong Park	Q76137	9941

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
CHO, HONG SOL	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/656,158	PARK ET AL.	
	Examiner	Art Unit	
	Hong Cho	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29,31-33 and 35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *27-29,31-33 and 35* is/are allowed.

6)☒ Claim(s) *1-4, 6-11, 13-15 and 17-22 and 24-26* is/are rejected.

7)☒ Claim(s) *5,12,16 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The following is in response to the amendments filed on 09/17/2004. Claims 30 and 34 are cancelled. Claims 1-29, 31-33 and 35 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 6, 14, 17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang (US 20040153502) in view of Leigh (US 20030158940).

Re claims 1-3, 14 and 25, Jiang discloses interconnecting IPv6 network and IPv4 network. Jiang discloses a plurality of IPv6 nodes, a plurality of IPv4 nodes, and a plurality of apparatuses (NAT-PTs in claims 2, 3, 14 and 25) for transmitting IP packets between the IPv6 nodes and the IPv4 nodes (figure 5; paragraph [0039], lines 3-8). Jiang fails to disclose the first and second IP packet transmitting apparatuses transmitting IP

packets share processing state information of the IP packets and using a predetermined message, to distribute their load of processing the IP packets and the second IP packet transmitting apparatus transmitting IP packets when the number of IP packets to be transmitted exceeds the processing capacity of the first IP packet transmitting apparatus. Leigh discloses each server with an Integrated Load Balancer (ILB) receiving information regarding the workload threshold of its corresponding host server (paragraph [0024], lines 5-11) and distributing load among servers (paragraph [0057], lines 22-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Jiang by adding to it the feature of threshold-based load balancing as suggested by Leigh for the benefit of reducing heavy load on a given NAT server by distributing traffic to the servers so that all servers have approximately equal ratios of traffic volume to traffic handling capacity.

Re claims 6 and 17, Jiang discloses indicating a NAT-PT's load information in light of address translation function (*a packet processing state of a particular NAT-PT apparatus is indicated by observing a rate of use of the mapping table*, paragraph [0017]), but fails to disclose determining a packet processing state based on a predetermined threshold. Leigh discloses evaluating load condition of a given server based on predefined threshold (paragraph [0024], lines 5-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Jiang to implement the feature of evaluating load condition based on predefined threshold so that a packet would be routed to a server with less workload for the benefit of meeting QoS of a given application.

Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang in view of Leigh and further in view of Parmar (US 20040111529).

Re claims 4 and 15, Jiang discloses all of the limitations of the base claim, but fails to disclose using ICMPv6 redirect message to distribute load information. Parmar discloses using ICMPv6 redirect message to deliver load information (paragraph [0030], lines 3-6; paragraph [0035], lines 1-2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Jiang to use ICMPv6 redirect message for distributing load information for the benefit of conforming to IPv6 standard.

Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiang in view of Leigh and further in view of Zhang et al (US20040001509), hereinafter referred to as Zhang.

Re claims 7 and 18, Jiang discloses indicating a NAT-PT's load information in light of address translation function (*a packet processing state of a particular NAT-PT apparatus is indicated by observing a rate of use of the mapping table*, paragraph [0017]), but fails to disclose an IPv4 address pool and determine a packet processing state based on a predetermined threshold. Leigh discloses evaluating load condition of a given server based on predefined threshold (paragraph [0024], lines 5-11). Zhang discloses a NAT-PT apparatus with an IPv4 address pool (figure 2, element 108). It would have been obvious to one having ordinary skill in the art at the time the invention was made to

modify the system of Jiang to implement the feature of evaluating load condition based on predefined threshold by observing a state of use of an IPv4 address pool so that a packet would be routed to a server with less workload for the benefit of meeting QoS of a given application.

Claims 8, 9, 19, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Leigh.

Re claims 8, 19 and 26, Zhang discloses an NAT-PT receiving an IPv6 packet (*a determination unit which receives an IPv6 packet*), mapping an IPv6 address to an IPv4 address and an IPv4 address to an IPv6 address based on pool of IPv4 addresses (*mapping table generation and storage unit Which generates and stores a mapping table for mapping an IPv4 address corresponding to the address of the IPv6 address*, figure 2, element 108; paragraph [0016]), and translating an IPv6 packet header into an IPv4 packet header (*an IP header translation unit which translates an IPv6 packet header into an IPv4 packet header*, paragraph [0012], lines 19-21). Zhang fails to disclose determining if received IPv6 packet is to be processed according to the current packet processing state of the NAT-PT apparatus. Leigh discloses determining if data can be processed at a given server based on its workload (paragraph [0024], lines 5-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the NAT-PT of Zhang to implement determining process of Leigh so that efficient service in address translation would be performed without network delay.

Re claims 9 and 20, Zhang discloses an NAT-PT receiving an IPv6 packet and mapping an IPv6 address to an IPv4 address (figure 2, element 108; paragraph [0016]), and translating an IPv6 packet header into an IPv4 packet header (paragraph [0012], lines 19-21). Zhang fails to disclose determining if received IPv6 packet is to be processed according to the current packet processing state of the NAT-PT apparatus. Leigh discloses determining if data can be processed at a given server based on its workload (paragraph [0024], lines 5-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Zhang to implement the feature of evaluating load condition based on predefined threshold so that a packet would be routed to a server with less workload for the benefit of meeting QoS of a given application.

Claims 10, 11, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Leigh and further in view of Parmar.

Re claims 10, 11, 21 and 22, Zhang and Leigh disclose all of the limitations of the base claim, but fail to disclose reporting the state of the NAT-PT apparatus being incapable of processing packets to the IPv6 node which transmitted the IPv6 packet is performed by using an ICMPv6 redirect message. Parmar discloses using ICMPv6 redirect message to deliver load information (paragraph [0030], lines 3-6; paragraph [0035], lines 1-2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Jiang to use ICMPv6 redirect message for distributing load information for the benefit of conforming to IPv6 standard.

Claims 13 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Leigh and further in view of Abdo et al (US 20040052257), hereinafter referred to as Abdo.

Re claims 13 and 24, Zhang and Leigh disclose all of the limitations of the base claim, but fail to disclose translating an IP header using a stateless IP/ICMP translation (SIIT) algorithm. Abdo discloses using SIIT algorithm for translating an IP header (paragraph [0122], lines 22-23). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Jiang to use SIIT algorithm for the benefit of conforming to RFC standard.

Allowable Subject Matter

4. Claims 5, 12, 16 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 27-29, 31-33 and 35 are allowed.

Response to Arguments

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc

Hong Cho
Patent Examiner
9/6/07